

# Getting Ahead of the Workers' Compensation Cycle

By Fritz Yohn

Year in and year out, state's workers' compensation systems are buffeted by a seemingly endless series of changes in a variety of factors. Among the most basic of these are changes in legislated benefits, loss cost inflation, accident frequency and claims severity. Add to this mix, changes in approved rates, premium credits and policy dividends and you have a scenario that should keep actuarial experts in the workers' comp field employed for some time.

As if this weren't enough, mix in the major changes in carrier reserving postures that occur from time to time and you can understand why insurers are often the last to know whether they're making money--or more often losing it hand over fist--on a given state's comp writings. Doesn't sound as if many workers' comp market participants are enjoying the experience, does it?

Each of these internal, system-specific factors undoubtedly plays an important role in the condition of a state's workers' comp system. However, much of the cyclical in pricing, and in turn insurer profitability, comes from outside the system. But before you resign yourself to an endless bumpy performance ride, consider this.

Among the many external factors impacting the workers' comp system, arguably the most influential is the level and volatility of economic activity in the construction and manufacturing sectors. This means that carriers *can* spot trends in the overall health of a state's comp system early enough to effectively compensate, or leverage, the shifting dynamics.

The importance of these two industries to overall system health stems both from their higher hazard levels and from the volume of their employment and payroll, which typically is volatile.

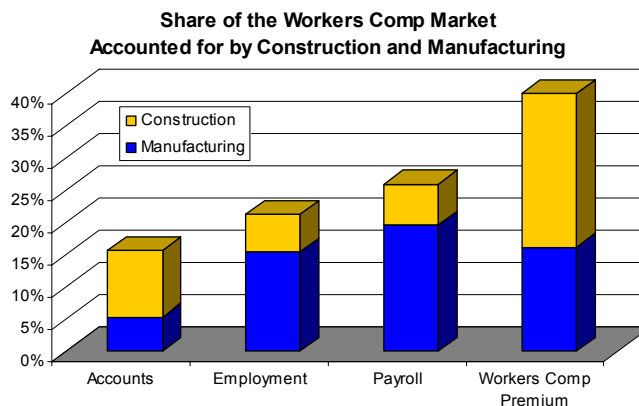
workers' compensation market, yet it has a much higher share of payroll (19.6 percent) and contributes 16 percent of workers' comp premiums.

Similarly, construction represents almost 26 percent of the total workers' comp premiums nationally, but constitutes only 10.4 percent of the total insured accounts. It's a lopsided state of affairs that means that these high-hazard accounts disproportionately drive aggregate rate indications.

The impact on workers' comp systems of construction in particular is further magnified by several additional sector characteristics. First, these firms tend to be smaller, newer and shorter lived than other accounts. As a result, a much smaller fraction of these accounts are experience rated than are those in other industries. These risks, therefore, benefit from generally lower and

slower responding class rates, effectively funding less of their share of claims costs than do equivalent, experienced rated risks.

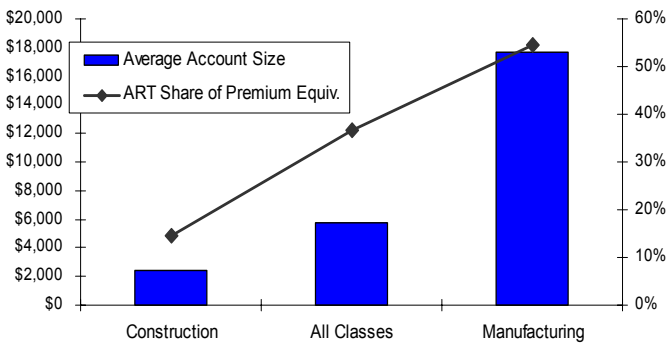
**Chart 1 – Share of Construction and Manufacturing in Workers' Comp System**



As shown in Chart 1, manufacturing represents only about 5 percent of the total accounts within the overall

The smaller size of construction accounts also is reflected in their more limited access to alternative risk transfer instruments (see Chart 2). In fact, MarketStance estimates that ART currently accounts for only about 14 percent of the construction sector's workers' comp exposures--a small fraction of ART's 54 percent share in manufacturing. This indicates that during any upsurge in construction, the bulk of the additional workers' comp exposures will be addressed by the traditional insurance market.

**Chart 2 – Average Account Size and Use of ART**



Even taken together, however, the construction industry's size, composition and hazard level, are not enough to explain its remarkable adverse impact on workers' comp ratemaking and carrier underwriting results. Instead, the catalyst in this destabilizing process is the extreme cyclicity of the economic activity in construction acting upon accident frequency, which is highly sensitive to the intensity of construction activity.

Chart 3 provides a sense of this cyclicity over the 1997-2001 period--the very period of workers' comp loss experience currently

being used in ratemaking analysis. Remarkably, construction's upsurge accounted for fully 25 percent of the net gain in national workers' comp premium during this period.

In sharp contrast with the construction industry picture during the 1997-2001 period, manufacturing experienced a sizeable reduction in jobs. While employment competition somewhat mitigated the impact of those job reductions on payroll and

premium, manufacturing nonetheless contributed only modestly to the net workers' comp premium gains during this period. As such, the impact of the construction industry's contribution to overall premiums and exposures was heightened.

In comparison, in past economic cycles, the upsurge in

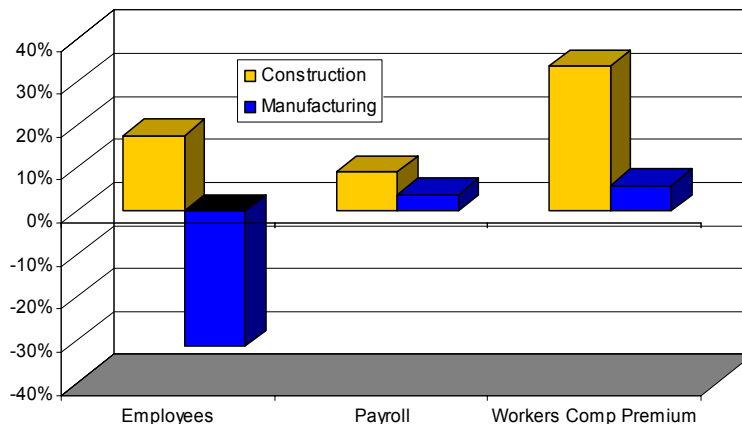
construction exposures would have been accompanied by a sizable uptick in manufacturing premiums. This tended to dilute the impact of the surge in potentially under-priced construction industry business on comp systems.

Just how volatile can construction activity be? Over the 1998 to 2001 period, as the following map shows, 13 states experienced very strong annual exposure growth rates of 6.5 percent or more. Among the states with these remarkable gains were California, Texas, Florida and New York--each an especially interesting market from a workers' comp perspective.

In contrast, another group of states experienced markedly sub-par growth in construction exposures, averaging less than 5 percent annually. Among these were Mississippi and Virginia, two states that continue to enjoy relatively low workers' comp loss ratios and show little if any sign of deterioration.

Admittedly, the observed linkage between rapid growth in

**Chart 3 – Contribution of Construction and Manufacturing to Workers' Comp Exposures**



**Map 1 – Annual Growth in Construction Workers’ Comp Exposures 1998-2001**



Purple < 3%; Green – 3.0-4.0%; Yellow – 5.0-6.0%; Red > 6.5%

construction activity and a broad deterioration of workers’ comp loss experience is far from perfect. In large part, this is because a number of other factors must be in alignment before the impact of construction becomes apparent in aggregate statistics on a state’s underwriting experience.

Nevertheless, it is possible to observe the impact of construction activity on loss experience through industry-specific accident frequency data compiled by the U.S. Occupational Safety and Health Administration and the Bureau of Labor Statistics.

Chart 4 shows the average frequency of accidents resulting in lost work days for construction firms and the United States as a whole. Rather than simple year-to-year changes, however, the chart shows the deviation in the most recent two years (2000-01) from the average over the preceding three years (1997-99). This 1997-99 baseline closely approximates the accident frequency data incorporated in current workers’

comp rate filings for most states.

In essence, Chart 4 measures the change in construction accident frequency since the period currently incorporated into workers’ comp rates.

An increase, such as that observed for California and Maine,

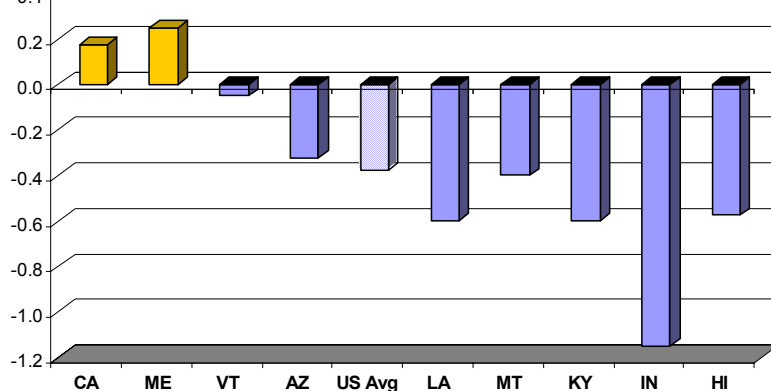
indicates that accident frequency has increased relative to the frequency underlying current rates. In the United States as a whole, in contrast, construction industry accident frequency has declined about 0.4 percent as economic activity has cooled following the strong expansion in the late 1990s. Indeed, a number of states including Louisiana, Kentucky, Indiana and Hawaii, have registered much stronger than average declines in construction accident frequency, consistent with the lackluster construction activity

in the states recorded on the map presented earlier.

Of course, relatively abrupt changes in accident frequency aren’t confined to the construction industry. Chart 5 shows the equivalent change from the “in-rates” accident frequency for the manufacturing sectors in the same states. Both Maine and Vermont, and to a lesser extent, Hawaii, have registered increases in manufacturing industry accident frequency. In particular, the significant uptick in frequency in Maine and Vermont are in sharp contrast to the national average frequency decline of 0.4 percent.

Declining accident frequency in construction may not guarantee an improvement in a given state’s aggregate underwriting results. It is, however, very highly indicative of better than average profitability for classes within a given industry. This is because the change in frequency is measured relative to the level of frequency implicit in current workers’ comp rates. As a result, an effective proactive underwriting strategy can be implemented by growing workers’

**Chart 4 – Recent Changes in Construction Accident Frequency**

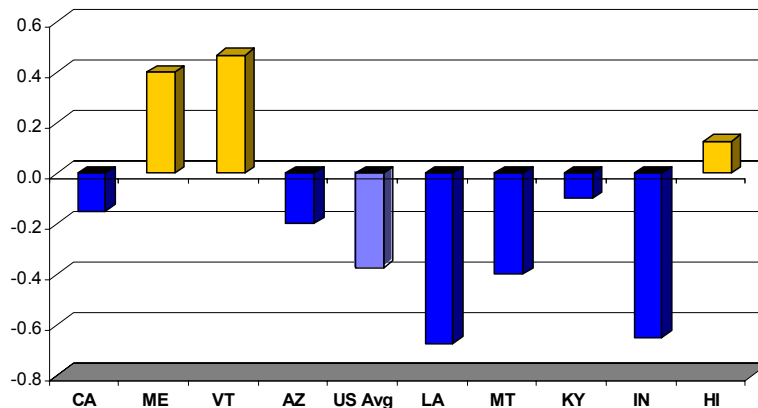


comp writings in a given industry only if the accident frequency measure has improved and if the aggregate underwriting results in the state are expected to be minimally acceptable.

Taking our analysis a step farther, Chart 6 shows how we can apply aggregate loss ratios and frequency improvements in a grid to clearly lay out which states possess the most attractive combination of conditions.

In this case, we've plotted the construction industry in a number of states (using 2001 aggregate loss ratios as the measure of aggregate profitability for each state). States falling within the upper right quadrant demonstrate better- than-average aggregate underwriting results and modest- to-significant improvement in accident frequency that is not yet likely to be reflected in the workers' comp rates currently in effect. This suggests that writing construction in these states can yield good returns.

**Chart 5 – Recent Changes in Manufacturing Accident Frequency**



Inversely, the lower left quadrant contains the rogue's gallery of states in which to avoid construction accounts. Aggregate comp profitability is poor in these states and construction classes are likely to experience deterioration in accident frequency that is not anticipated in the current rates.

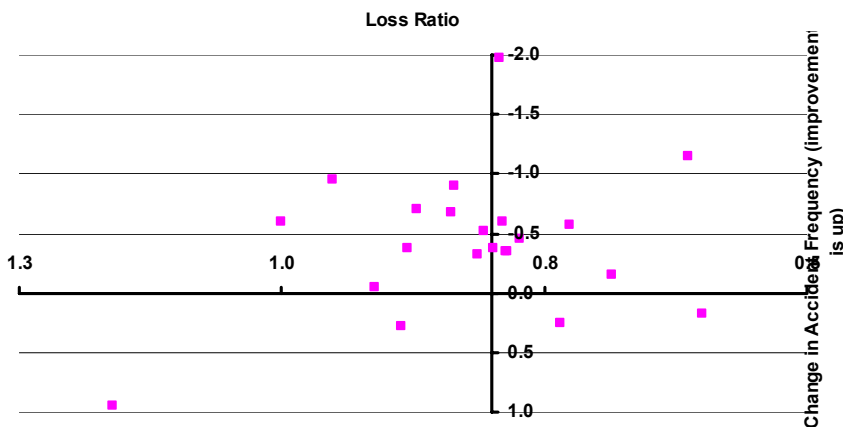
Both quadrants also speak to overall state system trends. Taking into account the disproportionate influence of construction and manufacturing on aggregate rate

indications, and the rearview ratemaking methodology, carriers can see when "redundant pricing" will also benefit rates in other industry segments-- or spot when aggregate rates will negatively impact other sectors.

How far down on the aggregate profitability and frequency grid is it safe to go? That depends on quite a number of factors. You're invited to check back for the next MarketStance installment scheduled to be published in *National Underwriter* on Oct. 20, which will explore some of the working conditions that drive accident frequency and investigate the answer to just that question.

*Frederick Yohn is the developer of "MarketStance," a market analysis tool for U.S. commercial property-casualty insurers and a registered trademark of IntelliStance, LLC, in Middletown, Conn.*

**Chart 6 – By State Frequency versus Aggregate Experience for Construction**



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